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# Minimality of convergence in measure topologies on finite von Neumann algebras

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## Abstract

We prove that the natural embedding of the metric ideal space on a finite von Neumann algebra M into the *-algebra of measurable operators $\mathfrak{M}$ endowed with the topology of convergence in measure is continuous. Using this fact, we prove that the topology of convergence in measure is a minimal one among all metrizable topologies consistent with the ring structure on $\mathfrak{M}$.

## Keywords

*-algebra of measurable operators, Convergence in measure, Metric ideal space, Von Neumann algebra